

We claim:

1. A device comprising:

- a reflective liquid crystal display having a backside and a front side and having one of cholesteric and polymer dispersed liquid crystal; and
- a solar cell having a substantially uniform dark-colored light-receiving active surface disposed proximal to the backside of the reflective liquid crystal display such that at least some light passing from the front side and through the backside of the reflective liquid crystal display will illuminate the light-receiving active surface.

2. The device of claim 1 and wherein at least some of the light passing from the front side and through the backside of the reflective liquid crystal display will illuminate the light-receiving active surface without first passing through a polarizing layer.

3. The device of claim 1 wherein the light-receiving active surface is substantially black-colored.

4. The device of claim 1 and further comprising a wireless communications device having a user interface operably coupled to the reflective liquid crystal display.

5. The device of claim 4 wherein the wireless communications device further includes a battery charger that operably couples to the solar cell.

6. The device of claim 4 wherein an electricity output of the solar cell is operably coupled to at least one of the reflective liquid crystal display and the wireless communications device.

7. The device of claim 1 and further comprising a plurality of the solar cells.

8. The device of claim 1 wherein the solar cell has a light-receiving inactive surface that has a different color than the substantially uniform dark-colored light-receiving active surface, wherein the device further comprises a mask having apertures that substantially conform to the light-receiving active surfaces of the solar cell and mask surfaces that substantially conform to at least some of the light-receiving inactive surface and that has a color that substantially matches the substantially uniform dark-colored light-receiving active surface.

9. A device comprising:

- a display comprising:

- one of:

- a reflective liquid crystal display having a backside and a front side and having one of supertwist nematic and twisted nematic liquid crystal; and

- an organic light emitting diode display having a backside and a front side; and

- a selective color reflector disposed substantially parallel to the backside of the display;

- a solar cell having a substantially uniform dark-colored light-receiving active surface disposed proximal to a backside of the selective color reflector such that at least some light passing from the front side and through the backside of the selective color reflector will illuminate the light-receiving active surface.

10. The device of claim 9 wherein the display further comprises a polarizing layer disposed proximal to the front side of the reflective liquid crystal display.

11. The device of claim 9 wherein the selective color reflector reflects at least wavelengths that correspond to a first color but not all visible spectrum colors.

12. The device of claim 9 and further comprising a wireless communications device having a user interface operably coupled to the display.

13. The device of claim 12 wherein the wireless communications device further includes a battery charger that operably couples to the solar cell.

14. The device of claim 12 wherein an electricity output of the solar cell is operably coupled to at least one of the display and the wireless communications device.

15. The device of claim 9 and further comprising a plurality of the solar cells.

16. A device comprising:

- a display having a substantially transparent backside;

- a solar cell having a substantially uniform dark-colored light-receiving active surface disposed proximal to the backside of the display such that at least some light passing through the display will illuminate the light-receiving active surface.

17. The device of claim 16 wherein the light-receiving active surface is substantially black-colored.

18. The device of claim 16 and further comprising a wireless communications device having a user interface operably coupled to the display.

19. The device of claim 18 wherein the wireless communications device further includes a battery charger that operably couples to the solar cell.

20. The device of claim 18 wherein an electricity output of the solar cell is operably coupled to at least one of the display and the wireless communications device.

21. The device of claim 16 and further comprising a plurality of the solar cells.

22. A device comprising:

- a touch sensitive display having a substantially transparent backside;
- a reflective liquid crystal display selected from one of:
 - a first liquid crystal display having a backside and a front side and having one of cholesteric and polymer dispersed liquid crystal; and
 - a second liquid crystal display having a backside and a front side and having one of supertwist nematic and twisted nematic liquid crystal material and a selective color reflector disposed substantially parallel to the backside of the second liquid crystal display;
- a solar cell having a substantially uniform dark-colored light-receiving active surface disposed proximal to the backside of at least one of the reflective liquid crystal display and the touch sensitive display such that at least some light passing through at least one of the reflective liquid crystal display and the touch sensitive display will illuminate the light-receiving active surface.

23. The device of claim 2 wherein the light-receiving active surface is substantially black-colored.

24. The device of claim 22 wherein the solar cell is disposed proximal to the backside of both the reflective liquid crystal display and the touch sensitive display such that at least some light passing through both the reflective liquid crystal display and the touch sensitive display will illuminate the light-receiving active surface.

25. A device comprising:

- a reflective liquid crystal display having a backside and a front side and including mono-cholesteric liquid crystal;
- a solar cell having:
 - a substantially uniform dark-colored light-receiving active surface disposed proximal to the backside of the reflective liquid crystal display such that at least some light passing from the

front side and through the backside of the reflective liquid crystal display will illuminate the light-receiving surface ; and

a light-receiving inactive surface that has a different color than the substantially uniform dark-colored light-receiving active surface;

5 - a substantially transparent coupling layer disposed between the backside of the reflective liquid crystal display and the light-receiving active surface of the solar cell; and

- a mask having apertures that substantially conform to the light-receiving active surfaces of the solar cell and mask surfaces that substantially conform to at least some of the light-receiving inactive surface and that has a color that substantially matches the substantially uniform dark-colored light-receiving active surface.

10

FIG. 10 is a schematic diagram of a solar cell assembly in accordance with the present invention.